

# Improving the City's Construction Contract Management

June 14, 2005

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# City of Seattle

## Office of City Auditor

Susan Cohen, City Auditor

June 14, 2005

The Honorable Greg Nickels  
Seattle City Councilmembers  
City of Seattle  
Seattle, Washington 98104

Dear Mayor Nickels and City Councilmembers:

Attached is our report on *Improving the City's Construction Contract Management*. The primary objectives of the review were to determine whether City Capital Improvement Program departments have adequate controls for managing construction contract payment review, authorization and processing, and to determine whether contracts are managed in accordance with contract terms. We spent the most time on Seattle Public Utilities because it is responsible for the construction phase for a large portion of City construction projects. We also reviewed projects in the Department of Fleets and Facilities, the Seattle Department of Parks and Recreation, the Seattle Center, Seattle City Light, Seattle Department of Transportation, and support services provided by the Contracting Services Division of the Department of Executive Administration.

We appreciate the assistance and professionalism of all the staff that participated in this review. If you have any questions, please call me at 233-1093.

Sincerely,

A handwritten signature in cursive script that reads "Susan Cohen".

Susan Cohen  
City Auditor

SC:MD

Attachment

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# **IMPROVING THE CITY’S CONSTRUCTION CONTRACT MANAGEMENT**

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## Introduction

The City of Seattle awards about 100 construction contracts in a typical year, with a total value often exceeding \$60 million. Between December 2003 and December 2004, we examined construction contract management processes in seven City departments that have construction functions. We spent the most time on Seattle Public Utilities (SPU), which is responsible for managing the construction phase of projects using nearly 70 percent of City construction funds. We also included projects and processes managed by the Fleets and Facilities Department (FFD), the Seattle Center (SeaCtr), the Seattle Department of Parks and Recreation (DPR), Seattle City Light (SCL), the Seattle Department of Transportation (SDOT), and the Department of Executive Administration Contracting Services Division (DEA/CSD). Our focus was on contracts valued at under \$5 million, a category that includes the vast majority of the City's capital projects.

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## Objectives, Scope, and Methodology

We reviewed construction contract management practices for a judgmental sample of fifty-eight projects in seven departments involved with the City's Capital Construction program. We assessed how the City met the four primary goals of contract management:

- Efficiency
- Effectiveness
- Accountability
- Equity

We also assessed whether City departments established and executed sufficient controls over their construction management practices to help ensure that the four primary goals were achieved. We compared department practices and project documentation against a standard template of best practices developed by the Office of City Auditor over the last several years.

While performing audits, our audit staff follow the Government Auditing Standards, as prescribed by the Comptroller General of the United States and the International Standards for the Professional Practice of Internal Auditing, prescribed by the Institute of Internal Auditors (IIA). With respect to quality assurance reviews and training, the Seattle Office of City Auditor follows the IIA standards<sup>1</sup>.

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<sup>1</sup> Since this draft received extensive review and discussion from the affected departments, we did not have an internal referencer review the draft.

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## Results in Brief

Overall, we concluded that the City has acceptable contract management practices and we gave the City high “marks” for the effectiveness of its practices. We also believe that the City could improve its performance with respect to the three other primary goals of contract management: efficiency, accountability, and equity. Our results are summarized in Exhibits 1 and 2 below, with additional information following these summaries.

### Exhibit 1: Overall Rating of the City’s Construction Contract Management

Primary Goal for Contracting	City’s Overall Performance
Efficiency	3
Effectiveness	4
Accountability	3
Equity	2

KEY	
Commendation	5
Satisfactory	4
Comment	3
Concern	2
Serious problem	1
Not reviewed	

### Performance Measured by the Four Primary Goals of Construction Contract Management

**Efficiency.** In rating efficiency, we consider such things as efficiently using resources, avoiding duplication of effort, and continuously improving systems. Seattle Public Utilities has developed a Construction Management unit that provides comprehensive services to Seattle City Light and the Seattle Department of Transportation. We believe the City could realize increased efficiencies by using this unit to provide construction management services for other City departments, rather than adhering to the current practice of requiring other departments to have their own construction management staff. Therefore we gave the City an overall rating of 3 (comment) for this goal. Other departments should take advantage of Seattle Public Utilities’ comprehensive document management system and construction management infrastructure. Seattle Public Utilities has consistently sought to continuously improve its construction management processes.

**Effectiveness.** To assess effectiveness, we examined the final amount paid on the contract relative to the original contract amount and to the project budget. We rated this 4 (satisfactory). However, we provide recommendations below for tightening controls to prevent cost overruns. While many projects exceeded the original contract amount, the departments have adequate systems for managing overall project budgets and deciding whether to exceed the original contract amount.

**Accountability.** To assess accountability, we considered the availability of policies and procedures, comprehensive document management and reporting systems, and the



adequacy of controls over contract compliance and progress payments. We rated this 3 (warranting comment), because of the absence of written guidelines and the shortcomings in several of the departments' document management systems.

**Equity.** To assess equity, we determined whether the City's contracting dollars were distributed to a wide variety of contractors. We rated this category 2 (warranting concern), because of the current City practice, when bundling large numbers of small utility and transportation projects into one contract, of adding additional work sites after the contract award. This results in a large amount of negotiated pricing rather than low-bid pricing on some projects, and concentrates much work with a relatively small number of contractors.

## 1. Evaluation of the City's Contract Management Controls

In this section we describe to what extent City entities involved in construction contract management have appropriate construction contract management controls. Exhibit 2 summarizes our results.

Exhibit 2: Rating of the City's Construction Contract Management Controls

Controls Tested	SPU	SCL	SDOT	DPR	FFD	SeaCtr	DEA/CSD
Bidding Process/Contract Award Process	4			4	4	4	5
Policies and Procedures	5			2	2	2	3
Document Management System	5		3	3	3	3	4
Construction Management	4			3	3	4	
Payment Review, Authorization, and Processing	4	4	4			4	4
Amount Paid on Contract	3			4	4	4	
Change Order Management	3			4	4	4	

**Bidding Process and Contract Award Processes.** *We reviewed project bid documentation and project monitoring processes for controls that promote compliance with state and City regulations.*

The Department of Executive Administration Contracting Services Division (DEA/CSD): This division is responsible for central management of the City's advertising, bidding and awarding of contracts. Good systems are in place for coordinating this work with all departments putting contracts out to bid. We gave DEA/CSD a commendation rating of 5 for establishing, maintaining, and seeking to improve this system.

Other Departments Reviewed: We gave them ratings of 4 (Satisfactory), which indicates they had controls in place to provide reasonable assurance that employees would follow

the procedures (largely established by DEA/CSD) that help ensure compliance with laws and regulations regarding bidding and contracting practices.

**Policies and Procedures.** *Written policies and procedures provide consistent guidance and clear definition of responsibilities for employees charged with managing aspects of construction projects. We reviewed department practices to evaluate whether employees have sufficient guidance for fulfilling their responsibilities, and whether processes are spelled out clearly enough to help ensure contract compliance and compliance with legal requirements.*

Seattle Public Utilities (SPU): Seattle Public Utilities has very comprehensive procedures for construction management. We gave them a commendation rating of 5 because they established, maintain, and use this system.

Seattle City Light (SCL): We did not give Seattle City Light a rating because it does not have responsibility for construction contract management. However, they do have responsibility for project management. We recommend that Seattle City Light create policies and procedures clarifying the roles and responsibilities for all those with project management responsibilities, especially with respect to approving project costs. This is particularly important during times of work overload, when project management and construction management duties are assigned to engineers not normally charged with these responsibilities. Clear policies and procedures will help the engineers understand their responsibilities and the processes available to them for resolving difficulties.

Seattle Department of Transportation (SDOT): We did not rate the Seattle Department of Transportation in this category because they do not have responsibility for construction management. However, they do have responsibility for project management. We recommend that the Seattle Department of Transportation continue its current effort to develop a project management procedures manual.

DEA/CSD: We rated DEA/CSD 3, warranting comment, as their policies and procedures have been under revision for some time. We recommend that DEA/CSD complete the updating now underway of its contract bidding and compliance monitoring policies and procedures.

Other Departments Reviewed: We recommend that the Department of Parks and Recreation (DPR), the Fleets and Facilities Department (FFD), and Seattle Center (SeaCtr) develop comprehensive policies and procedures to guide the work of construction managers and provide them with guidance to ensure consistent project documentation and management practices. An alternative method would be for the departments to work together to create one citywide system, with addenda specific to each department to address its particular circumstances. Because of the absence of written policies and procedures we gave these departments a rating of 2 (concern).

**Document Management System.** *We reviewed a sample of construction phase project documentation. Departments should use reliable document management*

***standards and procedures on construction projects to provide a written record of all aspects of the project, and to ensure that it was constructed in accordance with the contract documents. It is essential that an accurate record of the project be maintained from the onset of the project until its completion.*** (See APPENDIX 1 for additional information about the document management systems we reviewed.)

SPU: Seattle Public Utilities implements many best practices for document management. We gave them a commendation rating of 5 for creating and maintaining this system.

SCL and SDOT: We reviewed the project manager's records for one project in each of these departments that was related to construction projects in the sample. While this is not a sample from which we can generalize, we noted that project records for both projects were haphazardly organized. We did not provide a rating, but we recommend both departments implement a document management system that ensures consistent organization of project records.

DPR: The Department of Parks and Recreation has a strong conceptual system for thorough document management but needs to improve the physical organization and method of its document storage. The current system works for small projects, but once a project grows beyond a certain size, the multifold file becomes unwieldy and the storage system becomes inconsistent. We gave a rating of 3 (comment).

FFD: Fleets and Facilities Department should include a formal document management system in its current effort to develop comprehensive policies and procedures for project management and construction management. We rated it 3 (comment).

SeaCtr: Seattle Center has written checklists, but usage is not mandatory and each project manager is allowed to develop his or her own exclusive system. Seattle Center should develop a consistent document management system. We rated it 3 (comment). Seattle Public Utilities has an effective model that Seattle Center could emulate.

DEA/CSD: The Department of Executive Administration's Contracting Services Division has a well-organized document management system. We rated it 4 (satisfactory).

**Construction Management.** *We reviewed construction management processes for clarity of roles, uniform practices, transparency, and accountability.*

SPU: Seattle Public Utilities has a well organized system for managing projects. We rated it 4 (satisfactory). It should improve its assurance of timely notification regarding cost or quantity increases and schedule impacts to a single client-representative with authority to approve changes.

SCL and SDOT: We did not rate Seattle City Light and the Seattle Department of Transportation on this item, since they are not responsible for this function. However, as clients of the construction management services of Seattle Public Utilities, they should

clarify roles and responsibilities during the construction phase, and help ensure good communication between its project managers and Seattle Public Utilities' construction manager.

DPR and FFD: The Department of Parks and Recreation and the Fleets and Facilities Department hire Architectural/Engineering (A/E) consultants to do portions of their construction management, which provides inconsistent products from project to project, and less City control. We gave a rating of 3 (comment). We recommend that they use Seattle Public Utilities' Construction Management unit as opposed to hiring outside consultants.<sup>2</sup>

SeaCtr: 4 (Satisfactory) for the one project we reviewed.

DEA/CSD: Not applicable.

**Payment Review, Authorization, and Processing** *For Seattle Center, Seattle Public Utilities, Seattle Department of Transportation, Seattle City Light, and DEA/CSD, we reviewed the effectiveness and efficiency of processing payments to contractors by focusing on the evaluation and authorization of payment requests and change orders.*

SPU: Seattle Public Utilities progress payments are properly authorized in most cases, though minor omissions were found. We rated them 4, satisfactory.

SCL and SDOT: 4 (Satisfactory).

DPR and FFT: Did not review.

SeaCtr and DEA/CSD: 4 (Satisfactory).

**Amount Paid on Contract.** *The risk of cost overruns is common in construction projects. We evaluated the project team's ability to manage the project budget. Emphasis was placed on detecting typical overcharges in lump sum, unit price, and cost plus contracts. We reviewed project cost tracking systems by identifying processes for providing early detection and mitigation of potential cost overruns.*

SPU: In Seattle Public Utilities' construction projects we found that unit price quantities often varied by large amounts from quantities estimated in the bid documents. To take advantage of potential cost savings, SPU should implement existing contract provisions that allow renegotiation of prices for quantities varying more than 25 percent from quantity estimates. We gave a rating of 3 (comment).

SeaCtr, DPR and FFT: 4 (Satisfactory).

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<sup>2</sup> Seattle Public Utilities may need to hire resident engineers with additional expertise to implement this recommendation.

DEA/CSD: Not applicable.

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## 2. Managing Change Orders

Change orders are a frequent source of cost overruns on construction projects. We reviewed a number of elements of change order management. Our findings are summarized in Exhibit 3, below, and more detail is provided following the exhibit and in the attached APPENDIX 3.

Exhibit 3: Rating of Departments' Management of Change Orders

Change Order Controls Tested	SPU	SCL	SDOT	DPR	FFD	SeaCtr	DEA/CSD
Change Order Authorization and Management	3			4	4	4	
Managing the Scope of Change Order Work	2	2	2	3	4	4	
Change Order Markups	3			4	3	4	
Change Order Estimates and Negotiation	2			4	4	4	
Documentation of Force Account Work	3			5	4	4	

KEY	
Commendation	5
Satisfactory	4
Comment	3
Concern	2
Serious problem	1
Not reviewed	

**Change Order Authorization and Management.** *We reviewed change order documentation for required approvals, to determine whether the project team complied with the contract provisions concerning changes in work, and to ensure that the consultants/contractor complied with contract provisions.*

SPU: Seattle Public Utilities change orders generally had the required authorizations; however, on one project there were design changes indicated on three change orders and the required designer's signature was missing from the documentation. We gave a rating of 3 (comment).

Other Departments: 4 (Satisfactory).

**Managing the Scope of Change Order Work.** *Changes in scope and scope growth are a common occurrence in construction. If not managed properly these*

*changes can pose a risk to timely project completion and adherence to the project budget. We reviewed the project team's process for managing and controlling the project scope. We reviewed the usual sources that contribute to scope growth, assessed whether the scope changes were beneficial and necessary, and reviewed the impact of changes on project cost.*

SPU: We identified several Seattle Public Utilities' projects that were issued to bid without clear identification of all of the sites where work would be done, and where additional sites were added after the contract award. (See APPENDIX 2 on Regulations, Policies, and Procedures Regarding Out-of-Scope Change Orders.) We gave a rating of 2 (concern). When additional projects are ready to build, Seattle Public Utilities should conduct a new bidding process. Seattle Public Utilities should add out-of-scope work, including similar work at additional sites, only in emergencies. It should also establish a threshold amount for additive work, beyond which additional work must be issued for competitive bid.

SCL: When overflow work from Seattle City Light crews is shifted to contract work, the contract documents should clearly identify the scope, including the sites where the work will be done. One contract we reviewed was treated as essentially open-ended, and work orders were added to the contract for two and a half years. For this reason we gave a rating of 2 (concern).

SDOT: Same comment and rating (2, concern) as SPU.

DPR: For one Department of Parks and Recreation project we reviewed, the low bid came in 67% below the engineer's original estimate, which freed \$937,000 in the project budget for substantial additional work. We gave a rating of 3 (comment) because while this additional work was not issued for bid it was, at the same site and of the same type as the original contract work. DPR should establish a threshold amount for additive work beyond which additional work must be issued as a competitive bid.

FFD and SeaCtr: 4 (Satisfactory).

DEA/CSD: Not applicable.

**Change Order Markups.** *We reviewed change order markups on labor, materials, equipment, and subcontracts, and also reviewed taxes applied to change orders to ensure that these amounts complied with the contract terms.*

SPU: Seattle Public Utilities should pay increased attention to the details of change order markups. This means ensuring that markups are in accordance with the contract provisions for force account markups, materials and equipment taxed at the source are not taxed again in the progress payment, and subcontractors are not marked up as some other category (i.e., equipment). We gave a rating of 3 (comment).

SCL and SDOT: Seattle Public Utilities handles this aspect of contract management for

Seattle City Light and Seattle Department of Transportation.

DPR: 4 (Satisfactory).

FFD: Fleets and Facilities Department should improve attention to details of markups on change orders, ensuring that markups are per the contract provisions for force account markups, materials and equipment taxed at the source are not taxed again in the progress payment, and subcontractors are not marked up as some other category (i.e., equipment). We gave a rating of 3 (comment).

SeaCtr: 4 (Satisfactory).

DEA/CSD: Not applicable.

**Change Order Price Estimating and Negotiation.** *We reviewed change order documentation for the presence and adequacy of the independent engineer's estimates, the contractor's cost proposals, and price negotiations.* (See APPENDIX 3 on Managing Change Order Price Negotiation.)

SPU: Seattle Public Utilities should improve its consistency in documenting engineers' estimates and price negotiations. The practice has been to document the final agreed-upon price more consistently than the negotiations leading to that price. Engineers should include a name and date on all documentation. When engineers use Seattle Public Utilities' historic record of bid prices to determine a fair price, they should use the average of the low bids rather than the average of all bids received for an item. Seattle Public Utilities should also improve consistency in obtaining contractors' cost breakdowns for change order price proposals. Seattle Public Utilities should develop a form to help ensure consistent documentation of the engineer's estimate, the contractor's cost proposal, the outcome of price negotiation, and the dates of each. We gave a rating of 2 (concern).

SCL and SDOT: Seattle Public Utilities handles these aspects of contract management for Seattle City Light and the Seattle Department of Transportation.

DPR, FFD, and SeaCtr: 4 (Satisfactory).

DEA/CSD: Not applicable.

**Documentation of Force Account Work.** *We reviewed the implementation and compliance with specific contract provisions that enhance cost controls. This review included change order pricing clauses and change order administration, with particular attention on force account (time and materials) documentation.*

SPU: Seattle Public Utilities should improve the completeness of its force account documentation by ensuring that all backup of invoices are in the project file. We gave a rating of 3 (comment).

SCL and SDOT: Seattle Public Utilities handles this aspect of contract management for Seattle City Light and Seattle Department of Transportation.

DPR: In the one project where Department of Parks and Recreation had a question about the accuracy of force account documentation, they hired an external auditor to review invoices. The auditor found a number of improper markups, valued at more than \$6,000. We commend this approach. We gave a rating of 5 (commendation).

FFD and SeaCtr: 4 (Satisfactory).

DEA/CSD: Not applicable.



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## Managing Construction Project Documentation

We reviewed the project documentation systems for four departments: Seattle Public Utilities, the Department of Parks and Recreation, the Fleets and Facilities Department, and Seattle Center. We evaluated the systems for thoroughness, consistency, and ease of use. With respect to thoroughness, generally we found each project to be adequately documented commensurate with its complexity. However, we have some suggestions for improving the consistency and ease of use of several departments' systems.

**Seattle Public Utilities Records Documentation:** Seattle Public Utilities has an excellent document management system that is appropriate for the large number of projects it manages each year. The department also has a thorough procedures manual that is adhered to with admirable consistency by responsible employees. The manual has very detailed written procedures specifying required processes, identifying the person(s) responsible, and providing forms for approving and documenting processes.

Seattle Public Utilities' document management system establishes a consistent set of folders for each of the dozens of projects it manages. The policies and procedures manual for the document system requires specific sets of labeled folders. For example, there are separate folders for documents related to, among others, the bidding process, correspondence, change order documentation, progress payment documentation, daily inspection reports and transmittals. The folders are created at the beginning of each project, regardless of project size. They are consistent in appearance and labeling. The procedures assign responsibility for maintaining the documents in folders. This system makes it easy to locate documents for each project, and to compare projects to each other. As a project grows in size, additional folders can be added with sequential numbering within each category. Seattle Public Utilities also makes project information available electronically, including information on bids received, progress payments, change orders, and historic bid item prices for all projects dating back to the late 1990s. This wealth of data allows Seattle Public Utilities to continuously review and improve its processes. We found no significant problems with the documentation of the projects we reviewed. Project documentation was generally comprehensive and well organized.

We did, however, find that in some instances documents required by the Seattle Public Utilities' *Construction Management Handbook* were missing from the file, for example engineers' estimates or contractors' cost proposals. We also found instances where estimating documentation was in the file, but identifiers, such as the author and/or the date created, were missing. We recommend that a method be established to encourage including a name and/or initials and dates on all documents placed in the project records, and that forms be created to enforce consistency in documenting engineers' estimates and contractors' cost proposals for change orders.

**Fleets and Facilities Department Records Documentation:** At the time of our review, the Fleets and Facilities Department did not have written policies and procedures

providing instructions on a consistent method of documenting construction management. Project managers were free to develop their own systems for tracking project schedules, budgets, and expenditures. However, we found that project records were kept in a fairly consistent manner in a series of multifold files or accordion-like files, and that the Fleets and Facilities Department management was planning the creation of a consistent project management system. Progress payment documentation was generally adequate, with line items charged against the schedule of values after appropriate authorization.

The Fleets and Facilities Department is also planning to develop comprehensive policies and procedures for project and construction management. Because the Fleets and Facilities Department project managers sometimes share construction management duties with consultants during the construction phase, the department's manual should address issues related to this division of responsibilities.

**Department of Parks and Recreation Project Documentation:** The Department of Parks and Recreation Planning and Development Division does not have a policies and procedures manual for its project management or construction management processes. However, they provide a collection of electronic tools to project managers in the form of standard forms and checklists. These tools are available on the department's Web site, and provide some guidance to project managers and construction managers. The Planning and Development Division managers have developed written procedures for filing project records in a consistent manner in multifold files. The Department of Parks and Recreation's files generally contained complete documentation. On the largest project in the sample, the Magnuson Park Community Center renovation, a consultant was hired to handle daily inspections and change order estimate reviews. The consultant's daily reports were included in the project file. The project architect for this project created the minutes for the weekly construction meetings documenting the negotiation of change orders prices. While different consultants provided parts of the construction management function, all of the records were compiled in one place in the department's records. As projects grew in size and outgrew the multifold files, the storage system for the documentation lost its consistency. This made the process a bit more difficult to follow than the system used by Seattle Public Utilities, which ensures a consistent record-keeping style regardless of the project's size.

**Seattle Center Project Documentation:** Seattle Center has devised checklists and forms that encourage consistency in project managers' documentation of projects. However, the use of these checklists and forms is not mandatory and each project manager is allowed to develop his or her own systems. We reviewed only one project managed by Seattle Center. The documentation was held in one accordion-like file. We determined this was adequate, particularly given the small cost size of the project (\$53,000). The project's payment process documentation included appropriate authorization, separation of duties, and supervisory review.

## **Overall Observations for Improvement.**

- We observed inconsistent document management systems within several departments. Having one system makes it easier to find project documentation, to review a project for auditing or performance management, and to evaluate and recommend improvements to systems. Consistency makes it easier for project managers to take over each other's work and to compare projects with one another.
- Managers of construction management systems should design filing systems to be easily expanded as project documentation grows. We noted that paperwork in one accordion-like file was not sorted, which forced reviewers to leaf through all the papers to find a desired document. The systems that used multifold files were unwieldy when project documentation grew beyond several inches of documents, straining the capacity of clips to hold the documents in place. While the Seattle Public Utilities' system of using multiple, prelabeled folders for every project resulted in some waste when projects were so small that some folders remained empty to the end, its system was the easiest to use for quickly finding documents.
- All documents created for projects should be marked with a consistent identifier for the project, the name and/or initials of the person creating the document, and the date the document was created.

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## APPENDIX 2

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### Managing Change Order Scope of Work

After our initial data analysis of one contractor's projects, we expanded our sample to test whether there was a widespread practice of adding out-of-scope work to projects after the contract was issued. We relied on two sources for a definition of out-of-scope work.

*Change Order Criteria*, a form developed by the Department of Executive Administration Contracting Services Division, defines out of scope work as (among other things) "additional work...of the same type and substance as described in the original contract, but ...at a different location. The *Construction Management Handbook* developed and used by Seattle Public Utilities defines out-of-scope work as "work which is of a substantially different nature from the originally contracted work and/or additional work of a similar nature but which is not necessary to meet the intent and functionality of the project as originally designed."

In our initial data analysis we noted that Seattle Public Utilities (SPU) sometimes added out-of-scope work to its contracts by adding additional work sites after the contract was issued. This practice bypasses the competitive bidding process and potentially causes the City to pay more for the work. The practice also raises an issue of equity because it concentrates City work among contractors whom it is already doing business with, rather than potentially spreading work among more contractors. We concluded that this practice is not widespread and, with the exception of projects managed by SPU, change orders in our expanded sample were generally within the original scope.

We reviewed three projects managed by the Fleets and Facilities Department, three projects managed by the Department of Parks and Recreation, and 34 multisite projects managed by Seattle Public Utilities. The Fleets and Facilities and Parks and Recreation projects had site-specific plans and scopes of work, and they were bid as lump sum prices. For the Fleets and Facilities projects, all change orders were either due to unexpected site conditions or were minor embellishments of work at the same site(s) identified in the original bid documents. In one Department of Parks and Recreation project, some discretionary work at the original site was added by change order, but most of the change order cost was due to unexpected site conditions.

Seattle Public Utilities managed 34 of the multisite projects in our sample.<sup>3</sup> Thirteen of the 34 projects included change orders for work of a similar nature to the original scope, but the work was located at 73 additional sites not identified in the bid documents. Thirteen of these change orders were for emergencies. Emergencies are specifically exempted from the open bidding process under state law and the City's guidelines. Exhibit 4 below shows the SPU projects that had non-emergency sites added and the value of the added work.

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<sup>3</sup> The Seattle Public Utilities Engineering Services Division manages projects for operations divisions of their own department and also for Seattle City Light and the Seattle Department of Transportation.

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**Exhibit 4: Non-Emergency Sites Added to Existing Contracts**

<b>Project Number</b>	<b>Project Description</b>	<b>Added Sites</b>	<b>Beginning Dates</b>	<b>Cost of Off-Site Change Orders</b>
2000-001	University District Controllers/Paving and Vaults and Ducts for NE 50th St between 9th Ave NE and 17th Ave NE	1	3/12/2001	\$9,256
2001-059	Pioneer Square Sewer Rehabilitation	1	2/4/2002	\$55,105
2002-041	University Way NE Multi-Modal “The Ave”	1	6/21/2002	\$310,896
2002-083R	2002 Annual Point Sewer Repairs, Contract C	1	2/28/2003	\$47,390
2003-004	Vaults and Ducts Downtown Network 2002 for 5th Ave between Bell St & Blanchard St	1	3/24/2003	\$119,237
2004-015	S Findlay St/1st Ave S to 5th Ave S Water Main Replacement	1	5/10/2004	\$32,640
2002-012	2001 Arterial Major Maintenance Prog. Contract 2	2	5/20/2002	\$431,290
1999-080	Miscellaneous Spot Drainage Improvements	2	12/24/1999	NA
2003-049R	Spot Drainage Improvements Package #1	2	4/29/2004	\$104,410
2001-010	2001 Water Main Replacement	5	6/1/2001	\$98,455
2003-018	2002 Annual Point Sewer Repairs Contract A	5	2/9/2004	\$150,640
2000-040	2000 Underground Facilities Civil Construction	9	9/25/2000	NA
2001-082	2001 Annual Spot Sewer Repairs	9	2/11/2002	\$367,625
2001-068	2001/2003 Storm Drainage/LPA Spot Improvements Hillcrest (SW Andover St)	10	10/4/2001	NA
2001-087	2001/2002 Sewer Full Line Replacement	12	2/12/2002	\$598,222

Exhibit 4 shows the non-emergency projects added to existing contracts that we reviewed. The most recent contracts were issued in April and May 2004, and the two with the highest number of added sites were not closed until 2004. This would suggest the practice of adding sites after the contract was awarded is an ongoing practice at Seattle Public Utilities. The cost of these added-site projects ranged from \$9,256 to more than \$500,000.

**Contract Language Related to Out-of-Scope Work.** For projects that began between 1999 and early 2002, SPU explicitly included in its bid documents a statement that additional sites would be added to the contract work. This was sometimes called “Schedule 2” work. For example, the following language is from the specifications for PW 2001-068, 2001/2003 Storm Drainage/LPA Spot Improvements Hillcrest (SW Andover St), Specifications section 1.04.4:

No change orders will be issued for work performed and paid for under Schedule 2 Bid items shown in the Bid Form. The actual Bid item quantities to be constructed under Schedule 2 are unknown and the quantities provided for

bidding are estimates for bidding purposes only. The work identified by the Bid items in Schedule 2 may or may not be performed, and may be increased or decreased at the Engineer's discretion. Additional Bid items may be added to Schedule 2 by change order. The addition of any Bid items to Schedule 2 will not result in a net increase in the total estimated dollar amount of the Schedule 2 work. Bid items from Schedule 2 will not be considered Major Bid items.

Another example is language taken from the specifications for the 2001 - 2002 Sewer Full Line Replacement project, which had 12 sites added beyond those listed in the bid documents:

Work under this contract will occur at the following sites: 3261 Perkins Lane W; 4727 Perkins Lane W; South Concord Street west of 14th Street; 946 10th Ave E; ...16th Ave W between W Armor St and W Barrett St; and other sites (project assignments) in the city of Seattle to be determined during the duration of the Contract. [Emphasis added.] (From the Specifications for Project PW 2001-087, Sewer Full Line Replacement, section 0-02.4 Location of Project.)

It appears that after early 2002, Seattle Public Utilities stopped using the Schedule 2 language in its contracts. The 2000 and 2003 editions of the *Standard Specification for Road, Bridge, and Municipal Construction*, allowed for added work or extra work “within the general scope of the Contract.” (Section 1.04 on the Scope of Work.)

### **Pros and Cons of Adding Work Sites After Contract Award (Out-of-Scope Work)**

Adding work at additional sites after a contract is awarded is not consistent with the *Standard Specification for Road, Bridge, and Municipal Construction*, but does not appear to violate any regulations. (See the section below for a discussion of applicable regulations and policies.) The practice raises several issues that warrant consideration by decision-makers. Potential issues include:

- Added projects may not be prepared with as much detail or be subject to the same thorough review as when proposed projects are assembled as part of a bid package. We noted that sometimes the quantity estimates in bid documents significantly differed from the actual quantities used. Sometimes this is unavoidable because not all conditions can be anticipated. However, quantity variances are more likely when projects are added to an open contract, because projects can be tacked on without going through the usual review process.
- Our review showed that work at added sites often is priced by force account<sup>4</sup>, which lacks the price advantages of the low-bid system. (See APPENDIX 3 for further discussion of this issue.)
- A project's budget is harder to manage when most of the work is done by force account. When added sites are priced by force account, the final tab for the work is not known until it is completed.

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<sup>4</sup> The force account method pays the contractor for all time and materials used to complete the work included in a change order.

- Bundling many smaller projects into large groups for bidding, and then adding yet more projects after the contract is issued, leads to non-compliance with the City's policy of giving equal access to all types of businesses for City contracts.

Despite the rationale for submitting public works contracts for competitive bidding, we found that the City frequently added sites to City contracts after they were issued. Adding sites to existing open contracts has advantages for the City employees charged with construction management:

- It speeds up the process;
- It allows the City to use contractors that it is familiar with rather than facing the risks of going with an unknown low bidder;
- It saves work on writing separate specifications for each site.

There are conflicting City policies or practices that bear on this practice, including:

- Directing departments to coordinate work so that street openings are minimized and/or citizens and businesses are not inconvenienced more than necessary (Ordinance 118751). If a street is already being opened by a contractor for a City contract, another department with utilities in or near that location may decide to expedite work on those utilities by having this contractor perform added work during that street opening.
- Minimizing overhead costs and time by bundling together projects of a similar nature.
- Obtaining the most cost-effective work for the City by putting work out for competitive bid; however, it may also be cost effective to use an already mobilized contractor to perform additional work.

### **Regulations, Policies, and Procedures Regarding Out-of-Scope Change Orders**

We found no City or state regulations, policies, or procedures that prohibit the practice of adding work at additional sites after a contract is issued. The contract language in section 1.04 of the 2000 and 2003 editions of the *Standard Specification for Road, Bridge, and Municipal Construction* authorizes changes "within the general scope," but does not prohibit out-of-scope change orders. Nevertheless, we identified a number of sources that suggest that this practice may result in higher prices than might be achieved by putting added work out to public bid. This section discusses our research of this issue.

**State of Washington Regulation.** Washington State statutes do not address the practice of adding out-of-scope work to a contract. The following is a recommendation from a Washington State Auditor's Office report from 2000 on the state's contracting practices:

While planning the audit of construction contracts, we noted the absence of state law specifically defining limitations on the use of state agency change orders for either dollars spent or tasks performed. While state laws (RCW 29.04.010 and RCW 29.28.020(5)) call for advertisements defining the scope and nature of the proposed project for prospective bidders, there is no state law dealing with the use



of change orders occurring after the contract award.

During the bidding process, the state emphasizes the need for open and fair competition to obtain the best available price. However, adjustments or conditions that occur during the course of a project can be added through change orders for which there are no specific state requirements or guidelines. Questions such as the following are left to the discretion of the agency providing the change order:

- What defines a project?
- What defines work as being within or without the project scope?
- What is a reasonable amount or percentage for change orders?
- What constitutes a fundamental project or contract change that would require rebidding?

Currently in this state, agencies for the most part must work independently to determine what, if any, procedures are needed to adequately safeguard state assets during the change order process. There is little guidance to assist them in this effort. Because of the common use of change orders, the large dollar amounts which may be involved, and the variety of problems which might occur, we urge the Legislature to consider providing change order criteria to help ensure the proper safeguarding of these state assets. (Source: *Washington State Auditor's Office Special Audit of State of Washington Contracting Practices, July 1, 1999 through June 30, 2000.*)

**City Regulations.** Similarly, there is nothing in the City's Municipal Code that addresses the scope or dollar amount of change orders. A 1997 audit issued by the Office of City Auditor noted that the City's standard contract at that time specified that change orders must be within the scope of the original contract. The audit included the following recommendation:

Departments should discontinue the use of change orders unrelated to the original contract. The City should establish a Small Works Roster for construction projects under \$100,000 as provided for under RCW 39.04.155. (Source: *City's Management of Contract Amendments and Change Orders Needs Improvement*, Office of City Auditor, November 6, 1997, page 31.)

The Executive's response to our audit recommendation stated that they would "adopt policy guidelines generally defining what constitutes acceptable versus unacceptable change orders as they relate to the original scope of work of a project." Subsequently, the Department of Executive Administration Contracting Services Division (DEA/CSD) developed and made available to contracting departments a form, *Change Order Criteria*, that describes two categories of change order: "appropriate uses of change orders" and "change orders outside the original scope of the project." The following items are included among "change orders outside the original scope of the project":

A. Work that, at the time of bidding the original project, was planned to be

- accomplished through a separate project.
- B. Additional work is of the same type and substance as described in the original contract, but is at a different location. ...
- F. Significant additional work that could be competitively bid as a separate project without negatively impacting the original contract scope of work.

The form directs the departments to:

Attach a copy of the scope of work of the change order to this form and submit it for review to: Director, Department of Executive Administration, Contracting Services Division.

While the change order documentation we reviewed included this form signed by the “authorized individual submitting the form,” the Director of Contracting Services stated that her unit does not review the forms nor take any action as a result of them. The Director stated that the intention of the *Change Order Criteria* is to discourage change orders that are completely unrelated to the original project or are distant from the original project site, except in emergencies. However, the Director also said that it is the responsibility of the department initiating the project to implement this intention. Our review of construction contract documents indicated that it is a common practice, at least for projects managed by Seattle Public Utilities, to add sites to a project after the project has been awarded to the lowest bidder. While the Executive branch may have wanted to prevent out-of-scope change orders, there are no written policies, procedures or regulations prohibiting them.

The Seattle Public Utilities *Construction Management Handbook* defines “In-Scope Work” and “Out-of-Scope Work” as follows:

In-Scope Work: work which is necessary to complete the construction and meet the intent and functionality of the project as originally designed.

Out-of-Scope Work: work which is of a substantially different nature from the originally contracted work and/or additional work of a similar nature but which is not necessary to meet the intent and functionality of the project as originally designed. [Emphasis added.]

Section 3.14.2, of the *Construction Management Handbook*, “City Proposed Changes,” does not include non-emergency, out-of-scope work at additional sites as a reason for change orders. As stated above, again there is no language prohibiting it.

We note that the City did establish a Small Works Roster For Construction Projects as suggested by our 1997 audit. In fact, project 2003-049R, Spot Drainage Improvements Package #1, was a roster project that had two additional sites added to the contract after the contract was issued. The contractor of this project already performs a large share of

this kind of work for the City. Such actions do not further the City’s policy goal of using the roster to spread work to more contractors.

**Other Jurisdictions’ Regulations and Practices.** We reviewed regulations and/or policies manuals for 15 states to determine what practices they followed regarding out-of-scope change orders. Seven states are silent on the issue; however, the state auditors in three of them have issued findings faulting out-of-scope change orders because they conflict with the spirit of competitive bidding regulations. Two states provide approval mechanisms for out-of-scope change orders. Six states explicitly disallow out-of-scope change orders.

**Recommendation:** As a regular practice, City departments should add out-of-scope work only in emergencies. They should identify in advance projects to be bundled into one bid process, and subject projects to the full review process.

The City Council and Mayor need to clarify their policy priorities for construction contract practices (e.g., efficiency versus equity) and provide guidance to departments.

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## APPENDIX 3

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### Managing Change Order Price Negotiation

Change order prices for the projects in our sample were most often based on the force account method (also known as time and materials pricing), though for some projects the general contractor provided a lump sum proposal, and new unit prices were negotiated for others. The force account method requires additional vigilance on the owner's part to ensure that time is accurately reported and materials prices are properly documented. While force account is a standard method for calculating costs, it puts the risk on the owner, since the contractor is being compensated for all work, materials, and overhead. The City's 2003 edition *Standard Specifications for Road, Bridge, and Municipal Construction* states:

The terms of the contract or of a Change Order may call for work or Material to be paid for by force account. If so, then the objective of Section 1.09.6 is to reimburse the Contractor for all costs associated with force account work, including costs of labor, small tools, Supplies, Equipment, specialized services, Materials, applicable taxes and overhead and to include a profit commensurate with those costs. (Section 1.09.6(1) Force Account, General)

This method, while necessary for unforeseen circumstances and emergencies, removes incentives that encourage contractors to work efficiently. The following is a summary of our review of departments' change order pricing practices.

**Department of Parks and Recreation Change Orders.** Change orders were a significant factor in two of the three Department of Parks and Recreation projects in our sample. One project was an emergency contract for hillside stabilization, with nearly \$1 million of work done on a force account basis. We commend the department for hiring an independent auditor to review the project's price documentation. The auditor identified \$6,748 in incorrect markups and taxation that was credited back to the department. The change order work for the other project was largely due to unforeseen circumstances, and the price justification and vigorous negotiations were well documented in the weekly construction meeting minutes. The department also has a process for thoroughly vetting added work.

**Seattle Center Change Orders.** The change orders we reviewed at Seattle Center were small and directly related to the original scope. One, for \$1,921.21, was based on force account, and the other, for \$1082.79, was a lump sum bid. Both were properly documented and authorized.

**Fleets and Facilities Department Change Orders.** Change orders for the Fleets and Facilities Department were mostly done on a force account basis. The project records contained adequate documentation of the time and materials expended, and all change orders were properly authorized. The construction management contracts for these

projects required that the architect document proposed contract changes, evaluate the proposed costs, and recommend whether the City should accept or reject the proposed change order prices. The only documentation of the consultants' work found in the project records was the architects' signatures approving the change order costs. Fleets and Facilities Department officials explained that for small change orders it is not cost effective to ask consultants to transmit the full documentation. For large or unusual change orders the department has requested and reviewed the consultants' methodology and conclusions regarding pricing. Many government agencies set thresholds of cost or complexity, and require more careful reviews of change orders that exceed the thresholds. We recommend that the Fleets and Facilities Department adopt such thresholds as part of its development of project and construction management procedures.

### **Seattle Public Utilities Change Orders**

**Force Account Work.** Seattle Public Utilities' practice of adding additional work sites by change order after contract issuance sometimes results in large amounts of work being priced through the force account method rather than the low-bid method.<sup>5</sup> Exhibit 5 shows all the Seattle Public Utilities projects in our sample ranked by the percent of the contract cost attributable to non-emergency change orders that were priced by force account.<sup>6</sup> The 13 yellow highlighted projects had sites added after the contracts were issued. The exhibit shows that nine of 13 projects with added sites spent more than 20 percent of the contract cost on force account pricing rather than low-bid prices. For projects with no added sites only five out of 36 fell into this category.

**Recommendation.** We recommend that City departments reserve the use of change orders primarily for unforeseen conditions, pre-identified alternates, or emergencies. Departments should control the use of change orders for additional work outside the original scope, particularly work at unrelated sites, to minimize the need for price negotiations and to ensure broad competition for City work.

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<sup>5</sup> Some of these added sites involved emergencies. We eliminated emergency work from our analysis because state law specifically exempts emergency work from the competitive bidding requirement.

<sup>6</sup> In practice, Seattle Public Utilities' construction managers often converted force account documentation to a lump sum for purposes of change order payment. In most of the lump sum change orders we reviewed, the lump sum price was based on force account pricing and fully compensated the contractor for all time and materials used, thus placing all risk on the owner. Because of this, for purposes of this analysis, we treated all lump sum change orders as force account change orders.

**Exhibit 5:** Percent of Contract Cost Paid By Negotiated Prices  
 (Highlighted projects had sites added by change order after contract issuance)

PW#	Contractor	Project Description	% by Force Account or Lump Sum
1996-037S	Merlino	Landscape Supplemental Contract	0%
1998-052S	Merlino	Landscape Supplemental Contract	0%
2001-034	Lakeside Ind.	2001 Arterial Major Maintenance Program Contract 1	0%
2003-008	Wilder	2003 Arterial Major Maintenance Program Contract 1	0%
2002-024	Merlino	12th Ave Neighborhood Improvement	1%
2003-076	Merlino	26th Ave W & W Dravus St VUP-Civil Construction	1%
2003-052	Merlino	2003 Arterial Major Maintenance Program Contract 2	1%
2002-082	Merlino	NW 90th St. and 12th Ave NW Storm Drainage Improvements	1%
2002-039	Merlino	35th Ave SW Arterial Improvements SW Alaska to Roxbury	2%
2002-004	Merlino	2002 Water Main Replacement	2%
2001-040	Merlino	Seola Beach Drive SW Culvert Rehab	2%
2002-033R	Deeny	2002 Annual Point Sewer Repairs Contract D	3%
2001-067	Merlino	2001 Manholes and Ducts Downtown Network	3%
2000-002	Merlino	Admiral/California/Alaska Signals	3%
2001-036	MidMountain	2000 Pedestrian and Bicycle Neighborhood Improvements	3%
		Pedestrian Improvements at 30th Ave NE, NE 120th St and W Montlake PI E	4%
2000-001	Merlino	University District Controllers/Paving and Vaults and Ducts	4%
2001-010	Kar-Vel	2001 Water Main Replacement	4%
2000-046	Cascadia Civil	1999 Pedestrian and Bicycle Spot Improvements	4%
2001-072	Merlino	2001 Watermain Replacement Phase II	5%
2003-036	Geofill	2003 Areaways Hazard Mitigation Program	6%
		College Way N / N 100 <sup>th</sup> Street; Bonair PL SW Sewer Rehabilitation	7%
2002-041	Merlino	University Way NE Multi-Modal "The Ave"	7%
2002-062R	Deeny Rinker	2002 Annual Point Sewer Repairs Contract B	7%
2003-006	Materials	2003 Arterial Major Maintenance Program-Contract 3	8%
2000-057	Merlino	Capitol Hill Fire Flow Improvement Project	10%
2001-026	MidMountain	Spokane Street Viaduct-Contract 3 Utility Relocations, Etc.	10%
2004-015	Merlino	S Findlay St - 1st Ave S to 5th Ave S Watermain Replacement	10%
2003-069	Merlino	Broadview Blocks Natural Drainage System 107th Sub-Basin	12%
2002-036	MidMountain	Pioneer Square Historical District Areaway Reconstruction	13%
2003-070	Merlino	CSO Reduction Program - 2003 Retrofit Project	15%
2000-040	Coluccio	2000 Underground Facilities Civil Construction	16%
2003-048	Merlino	Vaults and Ducts Denny Way and Broad Street	16%
2001-046	Strider	Delridge Drainage Basin Phase II	17%
2001-090	MidMountain	West Lake Union Improvements	20%
2001-082	MidMountain	2001 Annual Spot Sewer Repairs	21%
2002-012	Merlino	2001 Arterial Major Maintenance Program Contract 2	21%
2002-076	Merlino	37th Ave SW Pavement and Utility Rehabilitation	21%
2001-035	King	Honey Creek Drain Pipe Improvements	24%
2002-083R	MidMountain	2002 Annual Point Sewer Repairs, Contract C	25%
		2001-2003 Storm Drainage/LPA Spot Improvements Hillcrest (SW Andover St)	26%
2001-087	King	2001-2002 Sewer Full Line Replacement	29%
2003-049R	Merlino	Spot Drainage Improvements Package #1	30%
2003-004	Merlino	Vaults & Ducts Downtown Network 2002, 5th Ave-Bell-Blanchard	32%
	Hawk Mechanical	Pump Station Rehab CIP 2002-Stations 22, 35, 37, 39 & 43	39%
1999-080	Merlino	Misc Spot Drainage Improvements	40%
2001-059	Merlino	Pioneer Square Sewer Rehabilitation	44%
2003-018	MidMountain	2002 Annual Point Sewer Repairs - Contract A	47%

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**Negotiated Unit Pricing.** Construction managers sometimes negotiate change order prices on a unit-price basis rather than using the force account method discussed above. To support this method, Seattle Public Utilities makes a wealth of historic bid pricing data available to construction managers on the department's Web site. We observed that construction managers used the average of *all* bids as a benchmark when establishing a change order price, rather than the average of *low* bids.

**Recommendation.** We recommend that Seattle Public Utilities provide guidance to construction managers to negotiate unit prices in a manner more favorable to the City, perhaps averaging only the lower range of bids rather than including the highest range bids.

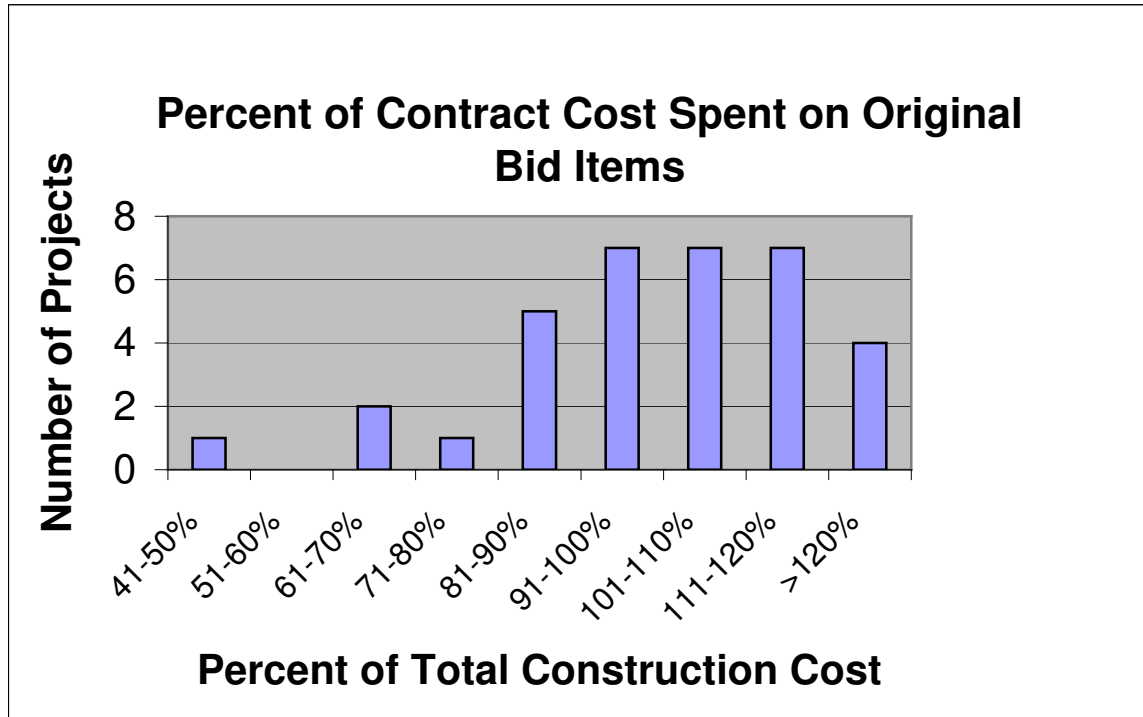
**Use of Low-Bid Unit Prices for Change Orders.** The unit-price contracts used by Seattle Public Utilities indicate that if the list of bid items in the original contract is comprehensive enough the City can, when needed, obtain additional quantities of work at the low-bid unit price. When more of an item is needed than originally estimated, the usage can exceed 100 percent of the contract's estimates. Exhibit 6 below shows the percent of the *original* contract amount spent on original unit-price bids for 34 of the projects in our sample. In this respect, Seattle Public Utilities appears to get cost-effective results from its unit-priced bidding process.

The bars represent the number of projects falling within ranges of dollars spent on original bid items as a percent of the original contract amount. Most of the projects (30) spent 81 percent or more of the original contract amount on unit prices established by low bids. The bars in the percentage range categories higher than 100 percent indicate that the City needed more units than originally estimated, but received them at the low-bid price.

**Missed Opportunity for Price Renegotiation.** The data in Exhibit 6 show another issue regarding the accuracy of the quantity of estimates for individual bid items in the contract documents. According to the City of Seattle *Standard Specifications for Road, Bridge and Municipal Construction* and the Seattle Public Utilities *Construction Management Handbook*, "an equitable adjustment for an increase or decrease exceeding 25 percent of the original quantity of any Bid item will be made in accordance with section 1.04.6." Our review showed that while it is common for individual bid items to be over or under estimate by more than 25 percent, it is rare for change orders to be negotiated to adjust the price. The City may be missing opportunities to obtain cost savings from economies of scale when the number of units exceeds the original quantity by 25 percent.

**Recommendation.** We recommend the City seek equitable adjustments and renegotiate prices when the estimates are over or under actual quantities used by 25 percent or more.

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**Exhibit 6: Percent of Contract Cost Spent on Original Bid Item**

Source: Project records in the Seattle Public Utilities Records Center, and data from the Seattle Public Utilities ESCAP and PWPTS electronic systems.

**Minor Errors Noted in Change Order Pricing**

We noted occasional, minor errors in change order pricing by the Fleets and Facilities Department and Seattle Public Utilities:

- Allowing higher markups than provided in the specifications for labor, materials, or equipment;
- Using the markup for equipment (15% or 21% depending on the year) for subcontract work (12% or less of the cost of the subcontract work, depending on the dollar value);
- Taxing the overall change order price when some of the components had already been taxed.

For the projects we reviewed, these errors did not exceed \$300. However, we believe that departments should consider clarifying instructions to those responsible for evaluating change order pricing to alert them to these common types of errors.



# City of Seattle

Gregory J. Nickels, Mayor

## Department of Executive Administration

Kenneth J. Nakatsu, Director

Date: May 16, 2005

To: Susan Cohen, City Auditor

From: Linneth-Riley-Hall, Division Director  
Purchasing and Contracting Services,  
Department of Executive Administration

Re: The Executive's Coordinated Response to OCA's audit on "Improving the City's Construction Contract Management."

This document represents the Executive's comments on the Office of the City Auditor's (OCA) draft report "Improving the City's Construction Contract Management." The Executive has taken a coordinated approach in responding to the draft audit report (Report). The response has been prepared by the Department of Executive Administration (DEA) in coordination with Seattle Public Utilities (SPU), Seattle City Light (SCL), Seattle Department of Transportation (SDOT), Fleets and Facilities Department (FFD), Seattle Center, and the Department of Parks and Recreation (DPR).

The departments appreciate the opportunity to review and comment on the report. We have focused our review on the key policy recommendations contained in the report rather than on methodological or data issues.

### **PART I: EXECUTIVE SUMMARY**

OCA reviewed construction contract management practices for a judgment sample of fifty-eight projects in seven departments. The OCA audit focuses on two areas:

- (1) How the City met the four primary goals of contract management (efficiency, effectiveness, accountability, and equity).
- (2) Whether the City departments have established and executed sufficient controls over their construction management practices.

Overall, OCA "...concludes that the City has acceptable contract management practices and we gave the City high marks for the effectiveness of its practices. We also believe that the City could improve the efficiency, accountability, and equity of its practices."

The OCA's central conclusion is significant and merits comment. Every year the City awards approximately 100 construction contracts with an average total award amount of more than \$60 million dollars. The Executive appreciates the recognition that, even with such a high volume of contracting activity each year, the City is managing its contracts in

an effective manner. The Executive also recognizes and agrees that there are opportunities for improvement, and the Executive departments referenced in the report will continue to make efforts to improve their processes in the areas of efficiency, effectiveness, accountability and equity.

## **PART II: DISCUSSION AND PROPOSED ACTION ITEMS**

Part II of the Executive's coordinated response focuses on three of OCA's primary recommendations:

- (1) The OCA's recommendation to further centralize the City's construction management in SPU;
- (2) The OCA's recommendation that out-of-scope work be added to contracts by change order only in the event of an emergency; and,
- (3) The OCA's recommendation to allow other types of change orders only in the event of unforeseen conditions or pre-identified alternatives.

As discussed in more detail below, the Executive does not concur with the OCA's recommendations as they relate to the three areas cited above.

### **Item 1: Centralization of Construction Management Services**

In 1997, the City consolidated construction management functions for City Light, SDOT, and SPU under the Construction Management Division of SPU's Engineering Services Branch, which now manages nearly 70% of the City's construction contracts. Management of the City's other construction contracts is decentralized and is assigned to the project management division of the department responsible for the programming and operations of facilities or for operating the built infrastructure, with the involvement of SPU's Construction Management Division and DEA's Contracting Services Division.

On page 3 of the Report, OCA states that the City could realize efficiencies by using SPU's Construction Management Division to provide construction management services for all other City departments.

The Executive agrees with OCA's conclusion that several of SPU's processes and procedures add efficiency, value, and consistency to the City's management of construction contracts. However, the Executive opposes complete centralization of the City's construction management services within SPU.

With few exceptions, SPU currently manages civil and transportation engineering projects including sanitary sewers; drainage systems; water distribution, transfer, and storage; street and sidewalk work; traffic signals; bridge replacements, retrofits, and rehabilitations; electrical distribution systems; and some building construction and remodeling. In contrast, many other City departments, such as DPR, FFD, Seattle Center and, while not included in the Report, the Seattle Public Library, have construction projects that involve maintaining, renovating, and constructing facilities and their

surrounding areas to enable the department to improve service delivery for a set of integrated programs.

All of these projects are important and complex, but not in the same way. The building and landscaping projects that these departments undertake involve challenges that differ significantly from the challenges presented by the civil and transportation engineering projects typically managed by SPU, including design aesthetics of significance to the surrounding community, specialized unique technical requirements of the client group (e.g., from a Police Training Facility to a Performance Hall to a Community Center), and dynamic programming and building/grounds design that must form an integrated whole. In these cases, project planning and management need to be integrally linked to construction management to achieve project objectives in a cost effective and efficient manner. It is unrealistic to expect SPU to bring the same level of expertise and awareness of programmatic issues to DPR and Seattle Center projects that it is able to bring to SCL and SDOT projects. A “one-size-fits-all” approach to construction management is not optimal or desirable.

Moreover, many such facilities or vertical construction projects are one-of-a kind projects, as opposed to SPU, SCL, or SDOT projects. There are more common elements shared between one water or sewer project and another, or between one substation or power distribution project and another, than between the widely varied types of projects undertaken by other City departments. The departments administering these very different types of construction work have the resources necessary to address the highly individualized needs of such projects and their constituents.

The Report on page 6 also implies that several departments’ use of consultants to handle some construction management tasks supports centralization in SPU’s Construction Management Division instead. The Executive disagrees. It is not uncommon for City departments *including* SPU, City Light, and SDOT to use outside consultants to provide specific construction expertise on their projects and to augment staff during peak construction periods, which is consistent with the standard practice among many government agencies. The practice allows an agency to benefit from the consultant’s expertise in managing specialized construction work, and to focus staff resources in other areas of benefit to the organization. For this reason, the Executive believes that the use of consultants is essential.

Finally, recent activities at SPU suggest that centralization is not appropriate. The OCA’s proposal for an expanded role for SPU comes at a time when SPU is striving to improve its operations by tailoring the level and nature of service it provides to the individual needs and anticipated risks of the project. Building in the flexibility to provide services that are appropriate to each specific project is in line with the efficiency and effectiveness goals of contract management. This effort would be undermined if SPU has to manage a larger and much more varied set of construction projects.

The OCA acknowledges that overall, City departments are managing their contracts in a satisfactory manner. The Executive believes it is appropriate to continue to have City

departments manage their building structures and landscaping projects in order to preserve a clear connection between project planning, project management and construction management. These practices have proven to be successful.

Proposed Action:

Where practical, departments (SDOT, SCL, and DPR) will continue to take advantage of SPU's comprehensive document management system and construction management infrastructure.

Items 2 and 3: Restrict Out-of-Scope Work to Emergencies and Restrict Change Orders

The OCA recommends that as regular practice, departments should, “reserve the use of change orders primarily for unforeseen conditions, pre-identified alternates, or emergencies. Departments should control the use of change orders for additional work outside the original scope to minimize the need for price negotiations.”

**Such restrictions would adversely impact the City's effectiveness and efficiency in accomplishing CIP work and would devolve to the City's financial disadvantage. The Executive is committed to ensuring that the City conducts its contracting practices consistent with all applicable laws and regulations, including the commitment to ensuring equity in contracting.**

Restricting the City's ability to add work via change orders except for the reasons stated in the Report would substantially limit the City's ability to capitalize on new opportunities that often don't exist prior to bidding, or to respond to issues raised by the communities impacted by the construction projects. It is sometimes in the City's best interest to allow bundling of work, including adding more sites after a contract is awarded, to minimize soft costs (e.g., project, administrative, and construction management costs). Utilizing a second contract instead of change orders often means that the City spends more money to achieve the same amount of work that a change order could accomplish, particularly when the scope of work and estimated dollar value being added are small. The additional time involved in preparing a second contract may also prolong adverse impacts to the neighborhoods and commuting public in construction areas, which is contrary to the Executive's initiative of increasing mobility in the right of way.

Each construction contract has considerable fixed costs, including, but not limited to, bid documents, advertisement, bid review, contract execution, and construction project file set up, pre-construction meeting, record of materials, and contract closeout – costs which multiply if a second contract is used. Additionally, many of the City's projects are funded by grants from other agencies, and the City might find it difficult to justify using grant monies for a follow up contract.

Other reasons to use a change order instead of a follow up contract include avoiding two

or more contractors working in the same area concurrently, or the alternative of extending total construction time due to sequencing two different contractors at the same construction site. The public expects the City to manage such situations so that we minimize inconvenience to neighborhoods and commuters. Sometimes a change order is the correct way to address the problem.

The Executive believes that departments are making principled decisions to use change orders. City departments continue to use the guidelines that were developed as a result of the 1997 Audit of the City's Change Order Practices to evaluate proposed change orders. These guidelines contemplate issuing change orders "...to address a deficiency in the original design and the original specifications and drawings; or, upgrading, enhancing, or changing materials or supplies required to complete the original scope of work." City departments use additional criteria in evaluating their CIP projects, including service or client needs, cost/benefit analysis, and other factors, criteria which are also consistent with the City's Standard Specifications.

The OCA acknowledges and the Executive agrees that the City is not in violation of any City or state regulations, policies, or procedures "...that prohibit the practice of adding work at additional sites after a contract is issued." The use of change orders to achieve this is a widely accepted industry practice. Overall, the Executive is satisfied that City departments are administering their contract change order practices in a responsible manner, consistent with all laws and regulations.

The draft report refers to a Washington State Auditor recommendation that the State Legislature should consider defining criteria for change orders on State projects. The Executive does not support the idea of legislating change order criteria at either the state or city level, because such a change is unnecessary and risky. One set of criteria cannot adequately address the myriad situations that arise during the administration of public construction contracts.

### Proposed Action

The Executive is committed to ensuring that the City conducts its contracting practices consistent with all applicable laws and regulations, including the commitment to ensuring equity in contracting. While the Executive does not support the creation of formal restrictions on the execution of change orders on City contracts, we do recognize the value in requiring City departments to execute them appropriately in a manner that is both cost effective and consistent with applicable laws and City policy. City departments will evaluate the various cost provisions in use on their construction contracts and make changes to them as deemed appropriate. One change already in process is the development of contract language addressing allowable change order markups for the City's Small Public Works contracts.

### Additional Comments

In addition to the above areas of primary focus, OCA noted some inconsistencies with document management systems within several departments and suggested that one

alternative would be the adoption of a single system throughout the City.

The Executive agrees that City departments need to have procedures defining their document management requirements; however, we do not believe it is necessary or appropriate that these be uniform across City departments or projects in order to achieve effective and efficient construction management in the best interest of the City. One system may not be appropriate for all departments for all projects for the following reasons:

- Departments deliver a variety of projects with a wide range of size, complexity, requirements, issues, constraints, and end-user needs. Project management processes are structured differently to efficiently meet project requirements.
- Departments have projects with a variety of funding sources and external financial and project reporting requirements that dictate tailored execution and documentation requirements.

### **Conclusion:**

While the Executive opposes OCA's recommendation to centralize construction management services within SPU and to impose any further restrictions on City change order practices, we recognize, as explained above, that there may be areas where City departments can further improve their contracting systems and processes.

The Executive acknowledges the many challenges facing City departments in completing their projects in the most cost effective manner while also aspiring to achieve some of the City's social equity objectives, particularly pertaining to providing more opportunities to small firms and women and minority owned businesses. The Executive supports the initiatives City departments are undertaking to promote these race and social objectives and further supports initiatives that result in efficiency, effectiveness, accountability and equity.

cc: Capital Cabinet



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## Office of City Auditor's Report Evaluation Form

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Our mission at the Office of City Auditor is to help assist the City in achieving honest, efficient management and full accountability throughout the City government. We service the public interest by providing the Mayor, the City Council and City managers with accurate information, unbiased analysis, and objective recommendations on how best to use public resources in support of the well-being of the citizens of Seattle.

Your feedback helps us do a better job. If you could please take a few minutes to fill out the following information for us, it will help us assess and improve our work.

\* \* \* \* \*

Report: *Improving the City's Construction Contract Management*

Release Date: June 13, 2005

Please rate the following elements of this report by checking the appropriate box:

	Too Little	Just Right	Too Much
Background Information			
Details			
Length of Report			
Clarity of Writing			
Potential Impact			

Suggestions for our report format: \_\_\_\_\_

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Suggestions for future studies: \_\_\_\_\_

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Other comments, thoughts, ideas: \_\_\_\_\_

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Name (Optional):

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Thanks for taking the time to help us.

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